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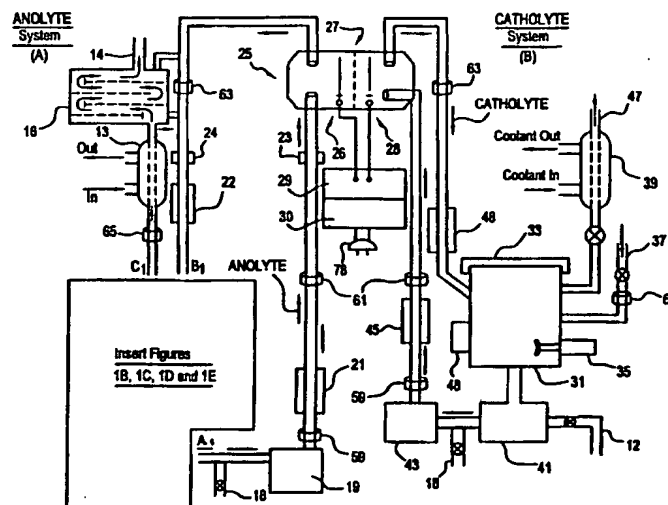
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(54) Title: MEDIATED ELECTROCHEMICAL OXIDATION OF DESTRUCTION OF SHARPS



(57) **Abstract:** A mediated electrochemical oxidation process is used for sterilization/disinfection of contaminated instruments and infectious waste. Contaminated instruments and wastes are introduced into an apparatus for contacting the infectious waste with an electrolyte containing the oxidized form of one or more reversible redox couples, at least one of which is produced at the anode (26) of an electrochemical cell (25). The oxidized species of the redox couples oxidize the infectious waste molecules and are themselves converted to their reduced form, whereupon they are reoxidized by either of the aforementioned mechanisms and the redox cycle continues until all oxidizable infectious waste species have undergone the desired degree of oxidation. The entire process takes place at temperatures between ambient and approximately 100 degree celsius. The oxidation process will be enhanced by the addition of reaction enhancements, such as: ultrasonic energy and/or ultraviolet radiation.

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